

Newark Water Supply

# 1998 Annual Water Quality Report

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CITY OF NEWARK



Pequannock and Wanaque  
(NJDWSC) Water Systems



This is an annual report on the quality of water delivered by City of Newark. It meets the Federal Safe Drinking Water Act (SDWA) requirement for "Consumer Confidence Reports" and contains information on the source of our water, its constituents, and the health risks associated with any contaminants. Safe water is vital to our community. Please read this report carefully and, if you have questions, call the numbers listed below.

#### THE CITY OF NEWARK'S DRINKING WATER MEETS OR SURPASSES ALL FEDERAL AND STATE DRINKING WATER STANDARDS.

Call us for information about the next opportunity for public participation in decisions about our drinking water at (973)256-4965. Find out more about the City of Newark on the Internet at <http://www.ci.newark.nj.us/>

#### OVERVIEW - Water Source

The City of Newark's water comes entirely from surface sources in the Pequannock and Wanaque watersheds that covers 150 square miles of forest lands in Morris, Sussex and Passaic Counties. Newark's Pequannock Supply is from five pristine water supply reservoirs; the 14.4 billion gallon supply is from Charlottesburg, Echo Lake, Canistear, Clinton and Oak Ridge reservoirs. NJDWSC gets its water from two of the most pristine water supply reservoirs in the country; namely, the 29.6 billion gallon Wanaque and the 7 billion gallon Monksville. The Commission also operates two pump stations designed to pump 250 million gallons per day of water from the Pompton River and 150 million gallons per day from the Ramapo River into the Wanaque Reservoir as needed. To date, the Bureau of Safe Drinking Water has not completed an assessment for our sources of drinking water. Source water assessment will be completed for all sources of public drinking water by May 2003.

#### Safeguarding Our Water

The City of Newark Water Treatment plant is located in West Milford and the NJDWSC Water Treatment Plant is located in Wanaque, NJ, where it is purified and filtered to ensure its safety and potability. To ensure the safety of the water, NJDWSC and Newark routinely monitors and tests the water at rivers, lakes and streams that supply its reservoirs. We continually monitor the quality of water throughout the distribution system which finds its way to you, the consumer. This is all done at fully NJDEP and EPA Certified Water Quality Laboratories.

#### What Does This Table Mean?

The table shows the results of our water quality analysis. The table contains the name of the substance, the highest level allowed by regulation (MCL), the ideal goals for public health, the amount detected, the usual sources of such contamination, footnotes explaining our findings, and a key to units of measurement. Definitions of MCL and MCLG are important.

#### Key To Table

**Maximum Contaminant Level (MCL):** The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

**Maximum Contaminant Level Goal (MCLG):** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

**Action Level (AL):** The concentration of a contaminant which, if exceeded, triggers

treatment or other requirement that a water system must follow.

**Treatment Technique (TT):** A required process intended to reduce the level of a contaminant in drinking water.

**ppm (parts per million):** 1 drop in 10 gallons, 1 inch in 16 miles, or one penny in \$10,000.

**ppb (parts per billion):** 1 drop in 10,000 gallons, 1 inch in 16,000 miles, or one penny in \$10,000,000.

**picoCurie (pCi):** A unit used to describe the level of activity or decay of a radioactive element.

**MFL = million fibers per liter**

**mrem/year = millirems per year** (a measure of radiation absorbed by the body)

**NTU = Nephelometric Turbidity Units**

**pci/l = pico curies per liter** (a measure of radioactivity)

**ppt = parts per trillion, or nanograms per liter**

**ppq = parts per quadrillion, or picograms per liter**

**Secondary Contaminants = Federal drinking water measurements for substances that are not health related.**

These are recommended levels and reflect aesthetic qualities of water.

**SMCL = Secondary Maximum Contaminant Level**

**TON= Threshold Odor Number**

**NS = No Standard**

**ND = Not detectable at testing limit**

#### Questions & Answers

Is my water hard or soft?

Hardness describes the level of the dissolved natural minerals (calcium and magnesium) in drinking water. These minerals are an important part of a healthy diet. Hard water contains more mineral nutrients and less sodium. A gradual build-up of calcium and magnesium in hard water can form harmless, filmy white deposits on faucets, bathtubs, and tea kettles. Hard water also requires more soap to lather fully. The degree of water hardness varies depending on where you live. Newark's water in this

area typically has a hardness level of 42 to 58 parts per million which means it is moderately soft.

Why is there chlorine in my water?

A century ago, acute diseases such as typhoid fever and cholera were a very real threat to our health because the microorganisms that caused these diseases



were found in public drinking water. However, for almost 100 years, water suppliers in America and other countries have used chlorine to treat or disinfect drinking water. According to the U.S. Environmental Protection Agency and other health agencies, chlorine is currently one of the most effective disinfectants to kill harmful microorganisms. Disinfection of all public water supplies is required by federal and state laws and regulations, including the Safe Drinking Water Act and the Surface Water Treatment Rule.

Does Newark add fluoride to my water?

No. Newark does not add fluoride to the water in your community. However, a small



## Newark's Water Quality Report

| Regulated Contaminants         | Units                       | Maximum Contaminant Level Goal (MCLG) | Maximum Contaminant Level (MCL)                 | Results           |                | Source of Contaminant                                                                                                               |
|--------------------------------|-----------------------------|---------------------------------------|-------------------------------------------------|-------------------|----------------|-------------------------------------------------------------------------------------------------------------------------------------|
|                                |                             |                                       |                                                 | Pequannock System | Wanaque System |                                                                                                                                     |
| Inorganic Contaminants :       |                             |                                       |                                                 |                   |                |                                                                                                                                     |
| Antimony                       | ppb                         | 6                                     | 6                                               | <0.2              | <0.2           | Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder                                                 |
| Arsenic                        | ppb                         | N/A                                   | 50                                              | <1.0              | <1.0           | Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes                              |
| Barium                         | ppm                         | 2                                     | 2                                               | 0.0116            | 0.084          | Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits                                          |
| Cadmium                        | ppb                         | 5                                     | 5                                               | <0.1              | <1.0           | Erosion of natural deposits; corrosion of galvanized pipes; discharge from metal refineries; runoff from waste batteries and paints |
| Chromium                       | ppb                         | 100                                   | 100                                             | <2                | <2             | Erosion of natural deposits; discharge from steel and pulp mills                                                                    |
| Copper                         | ppm                         | 1.3                                   | AL=1.3                                          | 0.29              | 0.29           | Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives                              |
| Fluoride                       | ppm                         | 4                                     | 4                                               | 0.08              | 0.1            | Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories           |
| Lead                           | ppb                         | 15                                    | 0                                               | 12.6              | 24             | Corrosion of household plumbing systems; erosion of natural deposits                                                                |
| Nitrate<br>(ppm as nitrogen)   | ppm                         | 10                                    | 10                                              | 0.04              | 0.3            | Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits                                         |
| Radiological Substances:       |                             |                                       |                                                 |                   |                |                                                                                                                                     |
| Gross Alpha                    | pCi/l                       | 0                                     | 15                                              | 0.16              | 0.51           | Erosion of natural deposits                                                                                                         |
| Microbiological Substances:    |                             |                                       |                                                 |                   |                |                                                                                                                                     |
| Total Coliforms Bacteria       | Presence of positive sample | 0                                     | Presence of Coliforms in >5% of monthly samples | 0                 | 0.9%           | Naturally present in the environment                                                                                                |
| Volatile Organic Chemicals:    |                             |                                       |                                                 |                   |                |                                                                                                                                     |
| VOC'S                          | ppb                         |                                       | MCL dependent on specific VOC                   | N.D.              | N.D.           | VOC's come from industrial chemical factories discharges. They include benzene, toluene and naphthalene                             |
| Turbidity :                    |                             |                                       |                                                 |                   |                |                                                                                                                                     |
| Turbidity                      | ntu                         | N.S.                                  | TT                                              | 0.3               | 0.1            | Soil runoff                                                                                                                         |
| Treatment by-products:         |                             |                                       |                                                 |                   |                |                                                                                                                                     |
| Total (TTHM's) Trihalomethanes | ppb                         | 0                                     | 100                                             | 78.5              | 38.5           | By product of drinking water treated with chlorination                                                                              |
| Secondary Contaminants         | Units                       |                                       | Secondary Contaminant Level (SCLG)              | Results           |                | Source of Contaminant                                                                                                               |
|                                |                             |                                       |                                                 | Pequannock System | Wanaque System |                                                                                                                                     |
| Alkalinity                     | ppm                         |                                       | NS                                              | 25                | 30             | A characteristic of water caused primarily by carbonate, bicarbonate and hydroxide ions                                             |
| Aluminum                       | ppm                         |                                       | 0.2                                             | 0.09              | 0.056          | By-product of water treatment using aluminum salts                                                                                  |
| Calcium                        | ppm                         |                                       | NS                                              | 11.9              | 17             | Erosion of natural deposits                                                                                                         |
| Chloride                       | ppm                         |                                       | 250                                             | 38.8              | 29             | Erosion of natural deposits                                                                                                         |
| Chlorine Residual              | ppm                         |                                       | 4                                               | 0.8               | 1.1            | Chlorine remaining in treated water and available to destroy disease causing organisms                                              |
| Color                          | CU                          |                                       | 10                                              | 4                 | 5              | Presence of manganese and iron, plankton, humus, peat and weeds                                                                     |
| Hardness                       | ppm                         |                                       | 50-250                                          | 42.1              | 58             | A characteristic of water caused primarily by salts of calcium and magnesium                                                        |
| Iron                           | ppm                         |                                       | 0.3                                             | 0.03              | 0.014          | Erosion of natural deposits                                                                                                         |
| Magnesium                      | ppm                         |                                       | NS                                              | 3.2               | 4              | Erosion of natural deposits                                                                                                         |
| Manganese                      | ppm                         |                                       | 0.05                                            | 0.01              | 0.013          | Erosion of natural deposits                                                                                                         |
| Odor (TON)                     | TON                         |                                       | 3                                               | 1                 | 1              | Algae and plant matter                                                                                                              |
| pH                             | units                       |                                       | 6.5-8.5                                         | 8.4               | 7.9            | Presence of carbonates, bicarbonates and carbon dioxide                                                                             |
| Sodium                         | ppm                         |                                       | 50                                              | 13                | 17             | Runoff from road salt and from some water softening processes                                                                       |
| Specific Conductance           | umhos/cm                    |                                       | NS                                              | 156               | 185            | Erosion of natural deposits                                                                                                         |
| Sulfate                        | ppm                         |                                       | 250                                             | 15.2              | 18             | Drainage of mining wastes, erosion of natural deposits                                                                              |
| Total Dissolved Solids         | ppm                         |                                       | 500                                             | 111               | 185            | Erosion of natural deposits.                                                                                                        |



amount of fluoride may occur naturally in your water. About 0.10 parts per million fluoride was detected in your water supply last year.

### Current Water Issues

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA and Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the EPA Safe Drinking Water Hotline (800-426-4791).

You may have noticed media attention to public water supply issues related to radiological substances, mercury, lead, radon, and *Cryptosporidium*. At Newark, we are well aware of these and other water quality matters. We have performed - and continue to perform - extensive testing of all of our water supplies. We want to assure our customers that we are providing the high-quality water you expect and deserve. You may be interested to know the following information:

- **Radiological Substances:** Our tests show the radiological substances level in our water supplies is significantly less than the level deemed acceptable by the U.S. EPA. In some cases, the level is so low that it cannot be detected. These substances are naturally occurring radioactive compounds.

- **Mercury:** Our testing equipment can detect mercury at a level 10 times less than the standard, and even at that low level, we have not detected mercury in our supplies.

- **Lead:** While the concentration of lead leaving the NJDWSC treatment facility and the Newark Pequannock facility is far below the action level (AL) of 15 parts per billion mandated by the Federal Lead & Copper Rule (most times it is non-detectable), some communities which the Commission and Newark serves, have failed to meet the AL at the water tap. It has been determined that this lead is most likely caused by lead pipes or lead solder and faucet mixtures in home plumbing and is not coming from the source supply. Newark's Pequannock Supply zone in the City of Newark, for the two rounds of testing conducted in 1998, was below the AL after the addition of a corrosion inhibitor, sodium silicate. Newark's Wanaque Supply will have a corrosion inhibitor added to the drinking water supply once a satellite feed station is constructed. It is anticipated the station should be operational by late 1999. It should be noted that infants and children, who drink water containing lead in excess of the action level, could experience delays in their physical and mental development. Children could show deficits in attention span and learning abilities. Also, adults who drink this water over many years could develop kidney problems or high blood pressure. Until the satellite feed station is completed, there are ways to reduce your exposure, however. High concentrations of lead are more prevalent in water which sits in home plumbing pipes for a number of hours (particularly overnight). One way to reduce these levels below the AL would be to flush a toilet or run a tap for 30 seconds to a minute or until a discernable temperature change in the water is noted. We have run laboratory studies on water from Newark households and found that lead levels consistently dropped below the 15 ppb, after a tap was left running for 30 seconds to a minute prior to its use. Consumers are encouraged to employ this technique at least once a day or when water has remained stagnant in pipes for long periods. This would generally occur in the morning or when returning home from work or school.

- **Cryptosporidium:** Lakes, rivers, and reservoirs may contain this tiny microbe. It is found in feces of humans and many domestic and wild animals. We test for *Cryptosporidium* on a monthly basis in our Pequannock finished water surface water supplies. It has never been detected in a viable state in any of our treated water supplies. Neither has it been found in the Wanaque Supply.

- **Total Trihalomethanes (TTHMs):** Since untreated river and lake water contains organisms that might make consumers ill, NJDWSC and Newark use a disinfectant in its Water Treatment Plants. Chlorine is used as a primary disinfectant and to

maintain a level of disinfection in the pipes that transport the water to homes and businesses in Newark. When organic compounds in untreated water react with the disinfectant, they produce by-products. In excessive quantities, these by-products may have harmful health effects. The EPA regulates some of these by-products known as TTHM's. Newark receives water that meets the yearly MCL average for TTHM's. NJDWSC and NEWARK have recently modified its treatment to further reduce its TTHM's and is currently participating in a statewide study to help further reduce the amount of naturally occurring organics in its watershed. Newark is planning to modify its treatment process to further reduce its TTHM's by the use of ozone as a disinfectant.

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive mineral, and can pick up substances resulting from the presence of animals or from human activity.

Substances that may be present in wells, lakes, reservoirs, and other untreated sources include:

Microbes such as viruses and bacteria that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife. Inorganic substances such as salts and metals that can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming. Pesticides and herbicides that may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses. Organic chemical substances including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems. Radioactive substances that can be naturally occurring or can be the result of oil and gas production and mining activities. To ensure that tap water is safe to drink, the Environmental Protection Agency prescribes regulations that limit the amount of certain substances

in water provided by public water systems. Food and Drug Administration regulations establish limits for substances in bottled water that must provide the same protection for public health.



The Safe Drinking Water Act regulations allow monitoring waivers to reduce or eliminate the monitoring requirements for asbestos, volatile organic chemicals and synthetic organic chemicals. Our system received monitoring waivers for asbestos and synthetic organic chemicals.

### Required Additional Health Information

To ensure that tap water is safe to drink, EPA prescribes limits on the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).